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ABSTRACT

This study examined college activities and environmental factors associated with the acquisition of continuous learning skills, looking at where students who report the greatest gains in continuous learning devote the most time and energy and at the student and institutional characteristics associated with above-average gains in the capacity for continuous learning. The sample for this study was composed of 17,541 college seniors attending four-year institutions who completed the College Student Experiences Questionnaire between 1994 and 1997. Four tentative conclusions were reached: (1) as a group, college seniors reported making substantial progress in areas important to continuous learning; (2) certain college activities and environmental factors appear to be important, including amount of effort students devote to classroom activities, amount of effort devoted to science and technology, and an institutional environment valuing critical, evaluative, and analytical performance; (3) gender differences suggest that men benefit most from peer engagement, while for women, involvement in athletic and recreational activities is important; and (4) some activities, such as participation in formal extracurricular activities, appear to contribute little to continuous learning competencies and skills. Nine tables summarize regression data. The questionnaire is appended. (Contains 36 references.) (CH)

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College Activities and Environmental Factors Associated with the Development of Life-Long Learning Competencies of College Seniors

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Abstract

College Activities and Environmental Factors Associated with the Development of Life-Long Learning Competencies of College Seniors

This study examined college activities and environmental factors associated with the acquisition of continuous learning skills. An analysis of responses to the College Student Experiences Questionnaire from 17,541 seniors at 106 colleges and universities showed that student effort devoted to course learning and science and technology-related activities and the degree to which an institution emphasized critical, scholarly performance predicted students' self-assessment of greater levels of progress in areas considered important to continuous learning after college. The influence of these and other predictors varied depending on certain student background characteristics (race or ethnicity, SES) and major field.

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This paper was presented at the annual meeting of the Association for the Study of Higher Education held in San Antonio, Texas, November 18-21, 1999. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

College Activities and Environmental Factors Associated with the Development of Life-Long Learning Competencies of College Seniors

INTRODUCTION

One thing about which virtually all stakeholders agree is that baccalaureate study must prepare students with the skills and competencies needed to be self-directed life-long learners. However, industry, government, and community leaders are concerned that sweeping demographic, economic, and technological changes are revealing a potential mismatch between what people need from higher education and what they get. An important mission of higher education has always been to prepare students for a suitable job following college and it has performed this function more or less effectively. And though most colleges and universities claim that the education students receive will equip them with the skills needed for life-long learning the evidence to substantiate this claim is thin (Hunt, 1992).

The information explosion and a knowledge-based economy are affecting all aspects of life, suggesting a "braided life plan in which the three major activities of life – education, work, and leisure – are pursued concurrently throughout life" (Johnstone, 1993, p. 9). Indeed, it is no longer adequate for college to prepare people just for the initial stages of a career. A longer life span, more frequent career changes, and rapidly evolving technical and industrial structures require that a much larger proportion of workers be able "to learn new skills and to absorb new ideas at various points in life" (Rosovsky, 1990, p. 104). Trends toward more part-time workers, self-managed project teams, and telecommuting all suggest the tomorrow's workplace will place greater demands on employees to obtain new information, apply it in productive ways, and respond quickly in a world in which economic and social problems are increasingly abstract and complex (Boyett & Snyder, 1998; Twigg, 1995).

Certain skills and competencies appear critical for being economically self-sufficient, productive, and civically responsible in the current climate -- communication, critical thinking, and problem solving. Problem solving is especially important as students will be faced with greater array of choices and more complex information to decipher (Jones, 1996). In a constantly changing world a premium will be placed on the skills that drive high-value enterprises including abstraction (the capacity to order and make meaning of massive flows of information and to shape information into meaningful patterns), systems thinking (the capacity to see the parts in relation to the whole and the source of problems), experimental inquiry (the capacity to create, test and evaluate alternatives), and collaboration (the capacity to engage in active communication and dialogue to get a variety of perspectives and to create consensus when necessary) (Wirth, 1993). Workers will also have to be able to add value quickly, and perform more like specialized generalists with professional or technical skills who can work in teams, develop and maintain relationships with different groups of people while focusing on details. Monitoring one's own cognitive processes now seems essential for the vast majority of post-college employment settings (Jones, 1997). Clearly, college graduates today must be able to continue to learn new skills and adapt to changing circumstances throughout their post-college life (Educational Commission of the States, 1995).

Faculty members, administrators, legislators, and employers agree in the abstract about what constitutes core continuous learning skills (e.g., problem solving, critical thinking, effective communication). Yet few are satisfied with the degree to which students are acquiring these competencies during college (Diamond, 1997; Ewell, 1995; Wingspread Group, 1993). Accurate or not, many employers perceive that students are not adequately prepared for workplace and other post-college challenges. This seems to have less to do with their preparation in academic content areas and more to do with their critical thinking and interpersonal skills (Gardner & Liu, 1996) and their ability to work with data and information (Van Horn, 1995). Yet, "as continuous life-long learning becomes the norm, educational institutions will be swamped with demand" (Boyett & Snyder, 1998, p. 7). Colleges and universities have an obligation to their constituents to determine if students are cultivating the skills and competencies that will allow them to succeed both in school and later in life.

Purpose

The purpose of this study is to discover the college activities and environmental factors that contribute to the acquisition of continuous learning skills. More specifically, what areas do those students who report the greatest gains in continuous learning devote their time and energy? In addition, what are the characteristics of students and institutions that are associated with above average gains in the skill areas that comprise the capacity for continuous learning? Answers to these questions can help colleges and universities better prepare graduates to meet the challenges and demands of the 21st century workplace and to live productive and satisfying lives after college.

METHODS

Data Source and Instrument

The data source for this study is the College Student Experiences Questionnaire (CSEQ) national database which includes more than 240,000 student records since 1983 from approximately 700 different colleges and universities. The Third Edition of the CSEQ (Pace, 1990a) asks students for some background information (age, race, gender, place of residence, parent educational level, employment status, enrollment status, major) and about their experiences in three areas: (a) the amount of time and energy (effort) they devoted to various activities (14 Activities scales totaling 138 items plus items about amount of reading, writing, and studying), (b) their perceptions of important dimensions of their institution's environment (8 Environment items), and (c) what they gained from attending college (23 Estimate of Gains items). All of the questions on the CSEQ tap student behaviors that are highly correlated with a desired learning and non-cognitive outcomes. According to Ewell and Jones (1996), the CSEQ has excellent psychometric properties and high to moderate potential for assessing student behavior associated with college outcomes. In large part this is because the items are well-constructed and responding to the questionnaire requires that students reflect on what they are putting into and getting out of their college experience.

As with all survey questionnaires, the CSEQ relies on self-reports from students. Examinations of the validity of self-reports (Baird, 1976; Lowman & Williams, 1987; Pace, 1985; Pike, 1989,

1995; Pohlman & Beggs, 1974; Turner & Martin, 1984) indicate that they are generally valid under three conditions: (1) when the information requested is known to respondents, (2) if the questions are phrased clearly and unambiguously, and (3) if respondents think the questions merit a serious and thoughtful response (Pace, 1985). CSEQ items satisfy all these conditions. The distributions of responses on the College Activities and Estimate of Gains items are approximately normal and the psychometric properties of the instrument indicate it is reliable (Kuh, Vesper, Connolly, & Pace, 1997). The Estimate of Gains items ask students how much they think their college or university experience contributed to their own growth and development (Appendix B) and Estimate of Gain scores are generally consistent with other evidence, such as results from achievement tests (Pace, 1985; Pike, 1995). For example, Pike (1995) found that student reports of their experiences using the CSEQ were positively correlated with relevant achievement test scores. In this sense the progress students report is a "value-added" judgment (Pace, 1990b). However, the gains items cannot be used as substitutes for objective achievement tests (Pike, 1996).

Sample

The sample for this study is composed of seniors (n=17,541) attending four-year institutions who completed the CSEQ between 1994 and 1997 inclusive. Only seniors were selected because they have the most exposure to college and benefit the most (Pascarella & Terenzini, 1991). Included in the sample were 106 institutions, including 33 doctoral-granting universities (DUs, n=5,622), 43 comprehensive college and universities (CCUs, n=8,487) , 6 selective liberal arts colleges (SLAs, n=616), and 24 general liberal arts colleges (GLAs, n=2,816). The DU group of schools is made up of a combination of research universities and doctoral universities as categorized by The Carnegie Foundation for the Advancement of Teaching (1994).

Dependent and Independent Variables

The dependent variable in this study is the Capacity for Life-long Learning (CLLL) index, a measure created by summing students' responses to the 11 Estimate of Gain items listed in Table 1 on the following page (Kuh, Vesper, Connolly, & Pace, 1997). Students respond to these items by indicating the degree to which they have gained or made progress, where 4 = "very much," 3 = "quite a bit," 2 = "some," and 1 = "very little." Thus, the maximum score on the CLLL is 44 and the minimum is 11.

Taken together, these 11 Estimate of Gain items represent the ability to "learn to learn" and interact effectively with others in a complex, information-based society, indicating the extent to which students have acquired continuous learning skills (Kuh et al., 1997). The CLLL index is reliable (.84) with item-score correlations ranging from .42 to .69 and item intercorrelations ranging from .22 to .56.

Table 1

Estimate of Gains Items Contributing to the Capacity for Life-Long Learning Index

CLLL Gain Items	Description
SPEC	Specialization for further education
GENED	General education
WRITE	Writing
OTHERS	Getting along with others
TECH	Understanding new scientific or technological developments
ANALY	Analytical skills
SYNTH	Synthesizing information
QUANT	Analyzing quantitative problems
INQ	Learning on one's own
CMPTS	Using computers
TEAM	Functioning as a team member

Three sets of independent or predictor variables were used in the study (see Table 2 on next page). The first set is composed of the 14 CSEQ College Activities scales that measure the quality of effort (time and energy) students expend in a variety of activities empirically linked with desired outcomes of college. Each College Activities scale score is a summation of students' responses to the various questions that contribute to the respective scale.

The second set of predictor variables are the eight CSEQ Environment items that measure students' perceptions of aspects of the college environment that are positively associated with a variety of desired outcomes of college (Pace, 1990b). These items are scored on seven point scale with 1 = weak emphasis and 7 = strong emphasis. Finally, five additional predictor variables were used that represent the amount of required and non-assigned books student read (0 = none to 4 = more than 20) and essay exams and term papers (0 = none to 4 = more than 20) students wrote during the current school year and students' overall satisfaction with their college experience, the sum of responses to two items, "how well do you like college?" scored on a 4-point scale from "don't like it" to "am enthusiastic about it" and "would you attend the same college again?" scored on a 4-point scale from "no, definitely" to "yes, definitely."

Data Analysis

Standard multiple regression and correlation analysis were used to determine the college activities and environmental characteristics that influenced students' capacity for life-long learning in the mid-1990s. For the overall student model, gender, race, socio-economic status, and major field were included as covariates to control for student background. However, in order to examine the unique relationships between CLLL and these particular student characteristics, regression models were estimated separately for gender, race, socio-economic level (SES), and major classification.

Table 2

College Activities and Environmental Predictor Variables

Predictor Variables	*Description*
Activity Scales	
QELIB	Library experiences
QEFAC	Experiences with faculty
QECOURSE	Course learning
QEAMT	Art, music, and theater
QEUNION	Student union
QEATHL	Athletics and recreation facilities
QECLUBS	Clubs and organizations
QEWRITE	Experience in writing
QEPERS	Personal experiences
QESTACQ	Student acquaintances
QESCI	Science and technology
QERESID	Campus residence
QECONTPS	Topics of conversation
QECONINF	Information in conversations
Environment Items	
ENVSCH	Emphasis on development of academic, scholarly, and intellectual qualities
ENVESTH	Emphasis on development of esthetic, expressive, and creative qualities
ENVCRIT	Emphasis on being critical, evaluative, and analytical
ENVVOC	Emphasis on development of vocational and occupational competence
ENVPRAC	Emphasis on personal relevance and practical values of your courses
ENVSTU	Relationship with other students, student groups, and activities
ENVFAC	Relationship with faculty members
ENVADM	Relationship with administrative personnel and offices
Additional Predictors	
READTEXT	Number of textbooks / assigned books read
READNON	Number of non-assigned books read
WRITESS	Number of essay exams in courses
WRITTERM	Number of term papers / written reports
OPINSCOR	Satisfaction index

The regression coefficients in the tables were converted to effect size in keeping with high quality standards for educational research (Wilkinson & APA Task Force on Statistical Inference, 1999). Effect sizes were calculated by taking the difference between the means of two groups, divided by the control group's standard deviation. We followed Cohen's (1977) general guidelines for determining the relative importance of effect size for dummy variables: anything below .50 is a small effect; between .50 and .80 is a medium effect;, and above .80 is a large effect. However, in

non-experimental analyses very large effect sizes for individual variables are uncommon because the total variance of the outcome measure is typically explained by a set of predicting variables.

RESULTS

Means and standard deviations on the Capacity for Life-Long Learning Index (CLLL) are presented in Table 3. The CLLL average for all seniors was 31.38 (sd = 5.70). This average, slightly less than 33, indicates that students on the whole reported that they had gained "quite a bit" in continuous learning skills from attending college.

[Insert Table 3 about here]

The CLLL scores for men and women did not differ. However, statistically significant differences in the CLLL were found for students by race and ethnic background, SES, and major field. However, the effect sizes for many of these differences (e.g., race, SES) were small, in the .10 to .15 range. However, with regard to major field, medium to large effect sizes (.48 to .70) were found, such as for engineering (33.46), physical sciences (33.29), and biological sciences (33.04) majors who scored the highest on CLLL and for arts (29.71), humanities (30.85), education (30.90), and foreign language (30.89) majors who had the lowest CLLL scores.

Overall, 18 out of the 27 college activities and environmental factors were statistically significant ($p < .01$) predictors of the CLLL index (adj. $R^2 = .46$, $p < .001$). The largest correlations with CLLL were a college environment emphasizing critical, evaluative, and analytical performance (ENVCRIT: r = .43), course learning (QECOURSE: r = .42), information in conversations (QECONINF: r = .41), topics of conversations (QECONTPS: r = .38), student satisfaction (OPINSCOR: r = .38), and a college environment that emphasized the development of academic, scholarly, and intellectual qualities (ENVSCH: r = .38). The reading and writing variables (READTEXT: r = .15, READNON: r = .08, and WRITESS: r = .10) as well as art, music, and theater (QEAMT: r = .15) and athletic activities (QEATHL: r = .18) had little influence on the CLLL.

[Insert Table 4 about here]

Altogether, the general model predicted 46% ($p < .001$) of the variance in the CLLL. Four variables accounted for 10.6% of the variance: science and technology (QESCI: $mc^2 = .042$), a critical, evaluative, and analytical environment (ENVCRIT: $mc^2 = .027$), satisfaction with college (OPINSCOR: $mc^2 = .021$), and course learning (QECOURSE: $mc^2 = .016$). The rest of the predictor variables combined contributed another 35% of the variance in the CLLL score.

Certain variables that would seem to be important to the development of continuous learning skills were not significant in the overall model, even though they were positively correlated with the CLLL index ($p < .01$). They included library experiences (QELIB: r = .26), student reading (READTEXT r = .15 and READNON r = .08) and writing (WRITESS r = .10), experiences with faculty (QEFAC: r = .33), and a college environment emphasizing the development of esthetic, expressive, and creative qualities (ENVESTH: r = .26). Though these variables do not seem to directly affect the CLLL they may have indirect effects on it.

[Insert Table 5 about here]

Though gender was not a significant predictor for the overall student model, we decided to explore whether there were any unique differences in the predictor variables between female and male students because the literature often reports differences in the college experiences of men and women that account for different patterns of outcomes (Pascarella & Terenzini, 1993). The results of the gender regressions are in Table 5. As with the overall model, four variables (QECOURSE, QESCI, OPINSCOR, ENVCRIT) accounted for the largest percentage of the variance in CLLL (12.5% in males and 11.1% in females). The model revealed subsets of 4 to 6 predictor variables unique to each gender. For men, experiences in the union (QEUNION), personal experiences (QEPERS), student acquaintances (QESTACQ), and a college environment that places emphasis on the development of esthetic, expressive, and creative qualities (ENVESTH) were significant; for women, experiences with art, music, theater (QEAMT), athletics (QEATHL), clubs and organizations (QECLUBS), reading non-assigned books (READNON), writing essay exams (WRITESS), and a college environment emphasizing personal relevance and practical value of course work (ENVPRAC) were significant.

[Insert Table 6 about here]

The regression models for race explained 44% of the variance in CLLL for Hispanic and African-American students, 50% for Asian students, and 46% for White students. Relatively few variables were significant for students of color compared with White students. For example, Hispanic students had one-third the number of significant predictors of CLLL compared with Whites and Asian American and African American students only about half the number of their White counterparts. Student satisfaction (OPINSCOR) was among the strongest predictors in all models except for African American students. Art, music, and theater (QEAMT) was a unique predictor for Asian American students. Only for Hispanic students was the perceived quality of relations between faculty and students (ENVFAC) significant; personal experiences (QEPERS) and numbers of assigned texts (READTXT) also were important to the development of CLLL for Hispanic students.

[Insert Table 7 about here]

Socio-economic status was not a significant predictor in the overall regression model. But as with gender because so little is known about the relationships between college experiences and the cultivation of continuous learning skills and competencies we decided to look more closely at the data from students from different SES backgrounds to see if this variable affected the dependent variable as it often does when other aspects of the undergraduate experience is studied (Pascarella & Terenzini, 1991). What students talk about as represented in the Topics of Conversation scale (QECONINF) items, such as current events, social problems, the arts, the economy, was not important for low SES students, though it was for medium and high SES students. However, the information exchanged in conversations (QECONTPS: $mc^2 = .032$), such as exploring different ways of thinking about a topic, changing one's opinion as a result of the knowledge or arguments presented by others, or referring to something a professor said about the topic, was a good predictor of CLLL for low SES students, but not for medium or high SES students. Science and technology experiences (QESCI: $mc^2 = .068$) was the best predictor of CLLL for high SES students. The quality of relations with faculty or administrators did not matter for low SES students. The only

students for whom the perception of the quality of relations with faculty (ENVFAC: $mc^2 = .014$) made a sizeable contribution to the CLLL was the high SES group.

[Insert Table 8 and Table 9 about here]

With regard to major field, the regression models for engineering, social sciences, and education were similar to the overall student model in that course learning (QECOURSE), science and technology (QESCI), satisfaction with college (OPINSCOR), and a college environment that emphasizes being critical, evaluative, and analytical (ENVCRIT) were influential. Engineering and computer science majors had the most parsimonious model with only four significant predictors. Business (13) and social sciences (11) had the most significant predictors. Effort expended in course learning (QECOURS) was significant for all majors, except for health-related fields, humanities, and biological sciences. Course learning (QECOURSE: $mc^2 = .091$) was a particularly strong indicator of CLLL for engineering majors. Although science and technology (QESCI: $mc^2 = .042$) explained the most variance, it had little impact in the humanities, business, and, surprisingly, biological science and computer science. Satisfaction with college (OPINSCOR) was significant for all majors, except the arts. Reading non-assigned books (READNON) was important for both biological ($mc^2 = .016$) and physical sciences ($mc^2 = .042$). A college environment that emphasized critical and evaluative judgment (ENVCRIT) generated a beta at or above 1 for all majors except arts, computer science, and biological sciences. Health, biological sciences, and computer science were the only three majors where relationships with students (ENVSTU) or relationships with faculty (ENVFAC) accounted for measurable variance in CLLL.

DISCUSSION

The results from this study point to four tentative conclusions about the relationship of college experiences and the college environment to the cultivation of continuous learning skills and competencies. First, as a group college seniors reported making substantial progress in the areas thought to be important to continuous learning. That is, on average students said they gained quite a bit in these key areas since starting college. This suggests that perhaps higher education's most important clients are being relatively well served by the enterprise. At the same time, there is still significant room to improve in preparing students to be able to adapt to the rapidly changing demands and conditions of the external environment, both economically and socially.

Second, certain clusters of college activities and environmental factors appear to be essential for the development of continuous learning skills and competencies. These are the amount of effort students devote to classroom activities (taking notes in class, participating in class discussion, thinking about practical applications of course materials, trying to explain materials to other students); the amount of effort devoted to science and technology (memorizing formulas, definitions, technical terms, testing one's understanding of scientific principles, completing experiments); an institutional environment valuing critical, evaluative, and analytical performance; and students' overall satisfaction with college.

Third, environmental conditions and patterns of participation in activities had a differential effect on the acquisition of continuous learning skills for various types of students. The findings from the regression model for gender, for example, are quite suggestive as they reflect some unexpected patterns. Men benefitted most from engagement with diverse peers (QESTACO) and from

interactions of a personal nature (QEPERS) and when they perceived that their college valued esthetic, expressive, and creative qualities (ENVESTH). For women, being involved in athletic and recreational activities was important, along with several other in class and out-of-class activities (cultural and performing arts, reading and writing). Women also benefitted from a college environment that emphasized the practical applications of collegiate course work. One wonders if the fact that women perceive the environment this way feel validated as self-directed learners and are consequently motivated to put forth greater levels of effort toward educationally purposeful activities. Only a handful of variables predicted the CLLL of students from low SES backgrounds and ethnic minority students. The largest effect sizes were associated with major field differences. Students in majors such as engineering, the physical sciences, and biological sciences, are clearly reporting greater gains in continuous learning competencies than students majoring in arts, music, theater, the humanities, education, and foreign languages. In addition, between majors, there are also differences in what specific college activities and environments account for the largest variance in life-long learning skills. These findings reinforce the contextual nature of the college learning community and could assist in efforts to maximize continuous learning skills for all students.

Finally, some of the activities that are widely believed to "matter" in preparing students for life after college contributed very little to enhancing continuous learning competencies and skills. For instance, participation in formal extracurricular activities (i.e., QEUNION, QEATHL, QECLUBS), which is important to the development of interpersonal and intrapersonal competence (Kuh, 1993, 1995) and thought to provide valuable experience when competing for jobs after college, was not significant in most models. Another type of experience noticeably absent from among the significant predictors was student-faculty interaction.

Implications

Although the effect sizes were fairly small, this study identified some areas to which institutional and student effort could be profitably directed to increase the impact of college on life-long learning skills and competencies. It seems wise, for example, for faculty members and student affairs professionals to work together to design learning experiences during college that induce students to participate certain college activities that contribute to an enhanced capacity for life-long learning. For instance, science and technology-related experiences were a strong predictor of CLLL scores. Revising general education requirements to increase the amount of science- and technology-related courses or other experiences where scientific discovery methods are featured would bode well for cultivating continuous learning skills. Also, requiring students to participate in a formally organized learning community and using problem-based learning in courses suitable for this pedagogical approach may alter the nature and frequency of substantive contact between students and faculty which may convert an insignificant statistical relationship into one that makes a meaningful difference in terms of outcomes.

For example, Kuh and Hu (1999) found that different foci and purposes of student contacts with faculty members had different effects on their self-reported gains and satisfaction. General types of substantive and social out-of-class contacts positively influenced what students got from their college experience, their views of the college environment, and their satisfaction, especially in the later years of college. In particular, discussing career plans had a systematic positive effect on gains, though it made little difference to satisfaction. Primarily social contact with faculty

members, such as having cokes and snacks together, had little effect on either gains or satisfaction. These findings coupled with the results of the present study suggest that institutions should try to design programs and reward systems that encourage informal interaction that would be more productive in terms of continuous learning gains, such as faculty-supervised internships or faculty-moderated class discussions between recent graduates and students in upper division courses in the major or capstone experiences that encourage students to synthesize what they have learned and to apply this information in solving concrete problems in their field, perhaps through community service or some other venue that directly connects students with agencies and organizations on or off campus that can benefit from the sort of expertise that students offer.

As the number of people entering postsecondary education continues to grow, so do the challenges for faculty, administrators, and student affairs professionals. All students do not respond in the same way. A one-size-fits-all approach is not likely to work. For Hispanics, for example, perhaps social contact with faculty is a pre-cursor to establishing positive views of the environment, specifically their perceptions of faculty accessibility and the overall quality of student-faculty relations represented by the ENVFAC scale.

A small number of variables affected CLLL scores of students from low SES backgrounds and ethnic minority students. This suggests that schools committed to creating a welcoming, affirming learning environment for all students should concentrate on these factors which appear to make the greatest difference for specific groups, such as mentoring for Hispanics because of the importance of perceived quality of student-faculty relations. It is also important to keep in mind that some variables, such as satisfaction, made a difference for all students except African American students. Institutions should be keenly aware of these factors, such as the perceived accessibility and responsiveness of faculty members, and attempt to modify policies that will shape faculty behavior in a productive manner.

Additional research is needed to examine the individual items making up the College Activity scales to determine the specific student behaviors that contribute to continuous learning which would help institutions more accurately target their human and fiscal resources to enhance student learning. For example, given the substantial resources many schools direct to certain extracurricular programs and services, institutions may need be to re-think how these infrastructures and activities can be re-aligned or altered to better contribute to building continuous learning skills.

In sum, the findings of this study suggest that to fulfill the increasing demand for college graduates with life-long learning skills, colleges and universities would do well to focus on curriculum revisions that require more students beyond selected science and technology-related majors to have more experience with these fields. Also, changes in institutional reward systems (Diamond, 1997) may also be helpful in encouraging faculty members and student affairs professionals to engage students in activities that allow students to practice and acquire a higher level of continuous learning skills and competencies.

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Table 3

CLLL Means and Standard Deviations for All Students and by Gender, Race, Major Classification, and Socio-Economic Status (SES)

VARIABLES	Mean	S.D.	N
ALL STUDENTS	31.38	5.70	17,541
GENDER			
Female	31.42	5.59	10,724
Male	31.31	5.88	6,789
RACE			
Asian	30.87	6.16	1,074
African-American	31.41	6.03	1,029
Hispanic	32.21	5.66	442
White	31.41	5.62	14,055
MAJOR			
Arts	29.71	5.78	865
Biological Sciences	33.04	5.66	1,384
Business	30.92	5.55	2,877
Computer Science	31.52	6.42	379
Education	30.90	5.77	2,102
Engineering	33.46	5.37	753
Health Related	32.16	5.69	1,172
Humanities	30.85	5.39	1,353
Physical Sciences	33.29	5.60	653
Social Sciences	31.12	5.62	2,713
Foreign Language	30.89	5.68	230
Interdept. Major	32.24	4.96	174
SES			
Low	30.90	5.84	4,110
Medium	31.48	5.73	7,600
High	31.59	5.54	5,675

Table 4

All Students Model
Regression Coefficients, Squared Multiple Correlations (mc^2) and
Pearson Correlation Coefficients with CLLL

VARIABLES	*Regression Coefficients*			*Correlations*
	B	S.E.	mc^2	r
GENDER	.002	.119	.000	.03
RACE	-.115*	.056	.001	.02**
SES	.008	.073	.000	.04**
MAJOR	-.047***	.013	.002	-.03*
QELIB	.013	.012	.000	.26**
QEFAC	-.004	.011	.000	.33**
QECOURSE	.133***	.013	.016	.42**
QEAMT	-.050***	.009	.004	.15**
QEUNION	.022*	.010	.001	.24**
QEATHL	.005	.008	.000	.18**
QECLUBS	.024**	.009	.001	.28**
QEWRITE	.055***	.011	.004	.32**
QEPERS	-.005	.011	.000	.27**
QESTACQ	.030**	.010	.001	.32**
QESCI	.132***	.008	.042	.33**
QERESID	.003	.008	.000	.25**
QECONTPS	.105***	.013	.010	.38**
QECONINF	.167***	.021	.009	.41**
READTEXT	-.019	.060	.000	.15**
READNON	-.091	.051	.000	.08**
WRITESS	-.074	.055	.000	.10**
WRITTERM	.211***	.059	.002	.15**
OPINSCOR	.526***	.043	.021	.38**
ENVSCH	.367***	.058	.006	.38**
ENVESTH	-.036	.046	.000	.26**
ENVCRIT	.773***	.056	.027	.43**
ENVVOC	.126**	.043	.001	.27**
ENVPRAC	.234***	.051	.003	.34**
ENVSTU	.264***	.048	.004	.31**
ENVFAC	.358***	.053	.007	.35**
ENVADM	.086*	.038	.001	.25**
Adjusted R^2			.46	

Note: * p<.05 **p<.01 ***p<.001

Table 5

Gender
Regression Coefficients and
Squared Multiple Correlations for CLLL

VARIABLES	*Male Students*			*Female Students*		
	B	S.E.	mc^2	B	S.E.	mc^2
QELIB	.008	.019	.000	.014	.015	.000
QEFAC	-.017	.018	.000	-.005	.014	.000
QECOURSE	.123***	.020	.014	.139***	.016	.018
QEAMT	-.034*	.015	.002	-.063***	.012	.006
QEUNION	.065***	.016	.006	-.010	.013	.000
QEATHL	-.005	.012	.000	.023*	.011	.001
QECLUBS	.018	.014	.001	.032**	.011	.002
QEWRITE	.059***	.017	.004	.051***	.013	.004
QEPERS	-.050**	.018	.003	.021	.014	.001
QESTACQ	.044**	.017	.002	.026	.013	.001
QESCI	.136***	.012	.046	.128***	.010	.038
QERESID	.016	.014	.000	-.006	.010	.000
QECONTPS	.102***	.020	.009	.118***	.017	.012
QECONINF	.191***	.033	.012	.148***	.027	.007
READTEXT	-.054	.095	.000	.042	.077	.000
READNON	-.044	.086	.000	-.147*	.064	.001
WRITESS	-.013	.089	.000	-.169*	.069	.001
WRITTERM	.192*	.095	.001	.245***	.075	.003
OPINSCOR	.578***	.067	.026	.539***	.056	.022
ENVSCH	.357***	.091	.006	.370***	.075	.006
ENVESTH	-.171*	.073	.002	.016	.058	.000
ENVCRIT	.934***	.088	.039	.703***	.073	.023
ENVVOC	.146*	.068	.002	.121*	.056	.001
ENVPRAC	.097	.078	.001	.318***	.068	.005
ENVSTU	.150*	.074	.001	.358***	.062	.008
ENVFAC	.389***	.081	.008	.293***	.069	.004
ENVADM	.061	.058	.000	.074	.049	.001
Adjusted R^2			.46			.46

Note: * p<.05 **p<.01 ***p<.001

Table 6

Race
Regression Coefficients and
Squared Multiple Correlations for CLLL

VARIABLES	*Asian*			*African-American*			*Hispanic*			*White*		
	B	S.E.	mc^2	B	S.E.	mc^2	B	S.E.	mc^2	B	S.E.	mc^2
QELIB	.055	.046	.003	-.055	.045	.003	-.056	.084	.003	.012	.013	.000
QEFAC	.078	.046	.006	.044	.045	.002	-.016	.086	.000	-.018	.012	.000
QECOURSE	.179***	.051	.026	.113**	.046	.012	.185*	.091	.031	.135***	.013	.018
QEAMT	-.110**	.039	.017	.013	.039	.000	-.063	.067	.007	-.043***	.010	.003
QEUNION	.097*	.042	.012	.016	.038	.000	.086	.074	.010	.016	.010	.000
QEATHL	-.032	.037	.002	-.016	.031	.001	.030	.057	.002	.012	.008	.000
QECLUBS	.011	.035	.000	.008	.036	.000	-.053	.062	.006	.025**	.009	.001
QEWRITE	.065	.043	.005	.079	.043	.007	.034	.075	.002	.049***	.011	.003
QEPERS	.045	.042	.002	-.081*	.040	.008	-.214**	.082	.050	.006	.011	.000
QESTACQ	-.030	.044	.001	-.013	.039	.000	-.017	.083	.000	.032**	.011	.001
QESCI	.140***	.031	.041	.112***	.033	.022	.154**	.055	.057	.136***	.008	.048
QERESID	.058	.040	.005	.029	.035	.001	.087	.066	.013	-.008	.009	.000
QECONTPS	.032	.052	.001	.071	.046	.005	.122	.098	.012	.128***	.014	.015
QECONINF	.170*	.084	.009	.341***	.078	.037	.271	.161	.021	.139***	.022	.007
READTEXT	-.241	.231	.002	-.011	.233	.000	1.070**	.434	.044	.010	.064	.000
READNON	-.160	.198	.001	-.006	.198	.000	-.628	.389	.020	-.114*	.055	.001
WRITESS	-.138	.236	.001	-.025	.224	.000	-.001	.377	.000	-.078	.058	.000
WRITTERM	.125	.242	.001	.131	.232	.001	.031	.447	.000	.206***	.063	.002
OPINSCOR	.715***	.164	.039	.265	.147	.006	.638*	.310	.031	.547***	.047	.023
ENVSCH	.474*	.214	.010	.575**	.215	.014	.548	.343	.019	.316***	.063	.004
ENVESTH	.040	.166	.000	-.278	.210	.003	.017	.279	.000	-.059	.049	.000
ENVCRIT	.688**	.235	.018	.565**	.208	.015	.423	.334	.012	.857***	.061	.033
ENVVOC	-.010	.152	.000	.187	.181	.002	.425	.299	.015	.153***	.047	.002
ENVPRAC	-.035	.190	.000	.432*	.202	.009	.271	.356	.004	.222***	.055	.003
ENVSTU	.205	.170	.003	.327	.187	.006	.131	.291	.002	.284***	.052	.005
ENVFAC	.327	.195	.006	.460*	.221	.009	.747*	.327	.038	.336***	.057	.006
ENVADM	.169	.155	.003	.077	.164	.000	-.237	.256	.007	.067	.040	.000
Adjusted R^2			.50			.44			.44			.46

Note: * p<.05 **p<.01 ***p<.001

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Table 7

Socio-Economic Status (SES)
Regression Coefficients and Squared Multiple Correlations for CLLL

VARIABLES	*Low SES*			*Medium SES*			*High SES*		
	B	S.E.	mc^2	B	S.E.	mc^2	B	S.E.	mc^2
QELIB	.026	.025	.001	-.004	.017	.000	.021	.018	.000
QEFAC	-.039	.026	.002	.014	.016	.000	-.035*	.017	.002
QECOURSE	.112***	.028	.011	.144***	.018	.019	.155***	.019	.024
QEAMT	.006	.023	.000	-.050***	.013	.004	-.066***	.014	.008
QEUNION	.020	.022	.001	.025	.014	.001	.026	.015	.001
QEATHL	.006	.018	.000	.012	.011	.000	-.004	.012	.000
QECLUBS	.043*	.021	.003	.023*	.012	.001	.015	.013	.001
QEWRITE	.056*	.024	.004	.044**	.015	.003	.056***	.016	.004
QEPERS	.037	.024	.002	-.009	.015	.000	-.032	.017	.001
QESTACQ	-.018	.024	.000	.036*	.015	.002	.061***	.016	.005
QESCI	.119***	.017	.032	.125***	.011	.039	.163***	.012	.068
QERESID	-.016	.018	.001	-.004	.012	.000	.015	.013	.000
QECONTPS	.054	.029	.002	.126***	.018	.015	.118***	.020	.013
QECONINF	.318***	.047	.032	.135***	.030	.006	.112***	.033	.004
READTEXT	-.264	.140	.003	.012	.087	.000	.159	.091	.001
READNON	-.122	.117	.001	-.114	.074	.001	-.108	.083	.001
WRITESS	.157	.130	.001	-.104	.080	.001	-.193*	.084	.002
WRITTERM	.057	.140	.000	.273***	.086	.003	.163	.090	.001
OPINSCOR	.490***	.098	.018	.568***	.063	.026	.499***	.067	.020
ENVSCH	.323*	.137	.004	.451***	.084	.009	.239**	.086	.003
ENVESTH	-.205	.114	.002	-.091	.067	.001	.062	.068	.000
ENVCRIT	.719***	.132	.021	.819***	.081	.031	.789***	.087	.030
ENVVOC	.399***	.105	.010	.106	.064	.001	.089	.063	.001
ENVPRAC	.377**	.126	.006	.194***	.073	.002	.135	.078	.001
ENVSTU	.354***	.109	.008	.210***	.069	.003	.231***	.074	.004
ENVFAC	.152	.122	.001	.281***	.078	.004	.491***	.079	.014
ENVADM	.009	.091	.000	.118*	.054	.002	.091	.057	.001
Adjusted R^2			.46			.47			.46

Note: * p<.05 **p<.01 ***p<.001

Table 8

Major Classification
Regression Coefficients and Squared Multiple Correlations for CLLL

VARIABLES	*Arts*			*Biological Sciences*			*Business*			*Computer Science*			*Education*		
	B	S.E.	mc^2	B	S.E.	mc^2	B	S.E.	mc^2	B	S.E.	mc^2	B	S.E.	mc^2
QELIB	.057	.053	.003	.029	.040	.001	.012	.029	.000	.070	.108	.003	.032	.036	.001
QEFAC	.004	.047	.000	.057	.037	.004	-.034	.028	.001	-.152	.105	.017	.033	.033	.001
QECOURSE	.165**	.056	.025	.098*	.042	.009	.137***	.030	.018	.251**	.092	.058	.127***	.037	.014
QEAMT	-.034	.033	.003	.023	.035	.001	-.094***	.027	.010	-.150	.102	.018	-.032	.035	.001
QEUNION	.045	.041	.003	-.021	.032	.001	.050*	.023	.004	.007	.085	.000	-.005	.030	.000
QEATHL	.038	.043	.002	.055*	.025	.008	-.010	.018	.000	-.031	.065	.002	-.024	.021	.001
QECLUBS	.027	.038	.002	.005	.029	.000	-.003	.021	.000	.093	.080	.011	.029	.027	.001
QEWRITE	.033	.047	.001	.072*	.038	.006	.096***	.026	.011	.089	.086	.009	.031	.033	.001
QEPERS	-.043	.044	.003	.016	.037	.000	-.065*	.027	.005	-.004	.102	.000	-.008	.033	.000
QESTACQ	-.025	.046	.001	.041	.034	.002	.046	.025	.003	.056	.088	.003	-.004	.032	.000
QESCI	.126**	.048	.020	.068*	.033	.007	.078**	.027	.007	.006	.078	.000	.110***	.029	.017
QERESID	-.003	.038	.000	.012	.027	.000	.022	.020	.001	.007	.084	.000	.018	.025	.001
QECONTPS	.120*	.054	.014	.114**	.042	.012	.135***	.031	.015	.100	.103	.008	.074*	.039	.004
QECONINF	.173	.094	.010	.077	.070	.002	.223***	.051	.016	.595***	.167	.095	.258***	.064	.019
READTEXT	-.411	.256	.008	.253	.209	.002	.190	.148	.001	-.118	.469	.001	.139	.177	.001
READNON	-.208	.220	.003	-.522**	.171	.016	-.158	.134	.001	-.543	.471	.011	.144	.147	.001
WRITESS	-.094	.261	.000	-.188	.179	.002	-.101	.133	.000	.254	.492	.002	.067	.168	.000
WRITTERM	.258	.280	.003	.226	.207	.002	.339*	.143	.005	-.280	.488	.003	.042	.169	.000
OPINSCOR	.183	.178	.003	.693***	.139	.041	.690***	.096	.042	1.097**	.408	.056	.436***	.136	.012
ENVSCH	.315	.251	.005	.306	.200	.004	.491***	.135	.011	.552	.464	.011	-.035	.189	.000
ENVESTH	.603**	.202	.026	-.117	.146	.001	-.025	.119	.000	-.428	.384	.010	.139	.166	.001
ENVCRIT	.252	.246	.003	.319	.182	.005	.798***	.136	.028	.451	.520	.006	.765***	.187	.020
ENVVOC	.191	.220	.002	.044	.140	.000	-.053	.113	.000	.777*	.389	.032	.114	.152	.001
ENVPRAC	.347	.234	.006	.116	.158	.001	.219	.128	.002	-.554	.461	.012	.297	.169	.004
ENVSTU	.029	.198	.000	.560***	.149	.024	.378***	.115	.009	-.047	.352	.000	.164	.165	.001
ENVFAC	.468*	.238	.011	.342*	.165	.007	.200	.125	.002	.767	.467	.022	.320	.170	.004
ENVADM	.190	.165	.004	-.197	.126	.004	.076	.090	.001	.398	.296	.015	.251*	.123	.005
Adjusted R^2			.50			.45			.47			.54			.39

Note: * p<.05 **p<.01 ***p<.001

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Table 9

Major Classification Continued
Regression Coefficients and Squared Multiple Correlations for CLLL

	Engineering			*Health Related*			*Humanities*			*Physical Sciences*			*Social Sciences*		
VARIABLES	B	S.E.	mc^2	B	S.E.	mc^2	B	S.E.	mc^2	B	S.E.	mc^2	B	S.E.	mc^2
QELIB	.026	.062	.001	-.002	.044	.000	.045	.035	.003	.048	.067	.002	.036	.028	.001
QEFAC	-.069	.054	.006	-.079	.045	.007	.061	.034	.006	-.029	.068	.001	-.035	.026	.002
QECOURSE	.276***	.055	.091	.086	.048	.007	.054	.043	.003	.212**	.072	.035	.156***	.030	.023
QEAMT	-.001	.054	.000	-.022	.047	.001	.002	.032	.000	-.042	.061	.002	-.024	.026	.001
QEUNION	.012	.048	.000	-.016	.039	.000	-.004	.032	.000	.094	.056	.012	.017	.022	.001
QEATHL	.020	.037	.001	.000	.030	.000	.031	.027	.002	.044	.043	.004	.012	.018	.000
QECLUBS	.036	.040	.003	.107**	.036	.021	.048	.027	.005	-.024	.050	.001	.044*	.020	.004
QEWRITE	.025	.050	.001	.036	.044	.002	.096****	.032	.015	.008	.064	.000	.042	.026	.002
QEPERS	-.049	.060	.003	.064	.043	.005	.062	.035	.005	.065	.062	.005	.034	.025	.002
QESTACQ	.041	.052	.002	.006	.043	.000	.009	.034	.000	.054	.057	.004	.074**	.025	.008
QESCI	.098*	.047	.017	.134***	.034	.035	.083*	.038	.008	.152**	.050	.037	.112***	.024	.019
QERESID	.029	.041	.002	-.008	.029	.000	-.026	.029	.001	-.054	.051	.005	-.011	.020	.000
QECONTPS	.073	.063	.005	.102*	.052	.009	.150***	.041	.022	-.035	.074	.001	.073*	.029	.005
QECONINF	.111	.098	.005	.119	.082	.005	.141*	.065	.008	.052	.121	.001	.194***	.049	.013
READTEXT	-.247	.310	.003	-.257	.264	.002	.306	.195	.004	-.429	.335	.007	-.014	.144	.000
READNON	-.184	.262	.002	.335	.234	.005	-.360*	.160	.009	.901***	.280	.042	-.062	.123	.000
WRITESS	.278	.300	.003	-.180	.217	.002	-.154	.184	.001	.118	.288	.001	-.166	.133	.001
WRITTERM	.445	.261	.011	.545*	.252	.011	.003	.204	.000	.063	.284	.000	.224	.141	.002
OPINSCOR	.566**	.198	.031	.469**	.177	.016	.516***	.150	.020	.636**	.234	.030	.407***	.102	.014
ENVSCH	.065	.256	.000	.290	.244	.003	.489*	.200	.010	.006	.298	.000	.211	.137	.002
ENVESTH	-.196	.177	.005	.055	.184	.000	-.244	.156	.004	.114	.224	.001	-.057	.114	.000
ENVCRIT	1.136***	.239	.083	.965***	.247	.035	.702***	.194	.022	1.163***	.309	.056	1.027***	.132	.050
ENVVOC	.085	.175	.001	-.017	.211	.000	.218	.132	.005	.205	.221	.004	.194*	.098	.003
ENVPRAC	.284	.210	.007	.511*	.216	.013	.237	.158	.004	.197	.271	.002	.073	.122	.000
ENVSTU	-.065	.217	.000	-.134	.188	.001	.334*	.154	.008	.058	.232	.000	.257*	.110	.005
ENVFAC	.138	.212	.002	.764***	.224	.027	-.011	.177	.000	.345	.282	.006	.456***	.120	.012
ENVADM	.028	.168	.000	-.186	.156	.003	.114	.117	.002	.317	.223	.008	.021	.086	.000
Adjusted R^2			.46			.45			.44			.47			.50

Note: * p<.05 **p<.01 ***p<.001

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College Student Experiences Questionnaire

The purpose of this questionnaire is to learn more about how students spend their time–in course work, in the library, in contacts with faculty, in extracurricular activities, in various social and cultural activities, and in using other facilities and opportunities that exist on the college campus. The benefit from this or any other survey depends on the thoughtful responses of those who are asked to help. Your willingness to participate is important and very much appreciated.

The information obtained from you and from other students at many different colleges and universities will help administrators, faculty members, and others to improve the conditions that contribute to your learning and development during college.

At first glance, you may think it will take a long time to fill out this questionnaire, but it can be answered quite easily. You can do it in perhaps only 30 minutes. After you finish, you will see that your answers provide a kind of self-portrait of what you have been giving and getting in your college experience. So, you may learn some valuable things about yourself.

You do not have to write your name on this questionnaire. But we do need to know where the reports came from. A number on the back page does that by identifying your institution. And, as you will see on the next page, we need to know a few things about you so that we can learn how activities might be related to age, gender, year in college, major field, where one lives, if one has a job, and so forth.

The questionnaire responses will be read by an electronic scanning device, so be careful in marking your responses. **Please use a #2 black lead pencil.** Do not write or make any marks on the questionnaire outside the spaces provided for your answers. Erase cleanly any responses you want to change.

Thanks for your cooperation and participation!

This questionnaire is available through the Center for Postsecondary Research and Planning, Indiana University School of Education, 201 North Rose Avenue, Bloomington, IN 47405-1006. It is intended for use by any college or university that wishes to have an inventory of the campus experiences of its students.

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Author: C. Robert Pace, Ph.D.

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BACKGROUND INFORMATION

DIRECTIONS: Indicate your response by filling in the appropriate space under each question.

Age
- ○ 22 or younger
- ○ 23–27
- ○ 28 or older

Sex
- ○ male
- ○ female

Are you single or married?
- ○ single
- ○ married

What is your classification in college?
- ○ freshman
- ○ sophomore
- ○ junior
- ○ senior
- ○ graduate student

Did you enter college here or did you transfer here from another college?
- ○ entered here
- ○ transferred from another college

Have you at any time while attending this college lived in a college dormitory, fraternity or sorority house, or other college housing?
- ○ yes
- ○ no

Where do you now live during the school year?
- ○ dormitory or other college housing
- ○ fraternity or sorority house
- ○ private apartment or room within walking distance of the college
- ○ house, apartment, etc. away from the campus
- ○ with my parents or relatives

At this college, up to now, what have most of your grades been?
- ○ A
- ○ A–, B+
- ○ B
- ○ B–, C+
- ○ C, C–, or lower

Which of the following comes closest to describing your major field of study (or your expected major)?
- ○ Agriculture
- ○ Arts (art, music, theater, etc.)
- ○ Biological Sciences (biology, biochemistry, botany, zoology, etc.)
- ○ Business
- ○ Computer Science
- ○ Education
- ○ Engineering
- ○ Health related fields (nursing, physical therapy, health technology, etc.)
- ○ Humanities (literature, history, philosophy, religion, etc.)
- ○ Physical Sciences (physics, chemistry, mathematics, astronomy, earth science, etc.)
- ○ Social Sciences (economics, political science, psychology, sociology, etc.)
- ○ Foreign Languages (French, Spanish, etc.)
- ○ Area Studies (Latin American Studies, Russian Studies, Asian Studies, African Studies, etc.)
- ○ Interdepartmental majors (international relations, ecology, women's studies, etc.)
- ○ Other: What? ↘ [ ]
- ○ Undecided

Did either of your parents graduate from college?
- ○ no
- ○ yes, both parents
- ○ yes, father only
- ○ yes, mother only

When, or if, you graduate from college, do you expect to enroll for a more advanced degree?
- ○ yes
- ○ no

Are you going to school full-time or part-time?
- ○ full-time
- ○ part-time

30

During the time school is in session, about how many hours a week do you usually spend on activities that are related to your school work? This includes time spent in class and time spent studying.

- ○ about 50 hours a week or more
- ○ about 40 hours a week
- ○ about 30 hours a week
- ○ about 20 hours a week
- ○ less than 20 hours a week

During the time school is in session, about how many hours a week do you usually spend working on a job?

- ○ none. I am not employed during the school year.
- ○ about 10 hours or less
- ○ about 15 hours
- ○ about 20 hours
- ○ about 30 hours
- ○ more than 30 hours

About how much of your college expenses this year are provided by your parents or family?

- ○ all or nearly all
- ○ more than half
- ○ less than half
- ○ none or very little

What is your racial or ethnic identification?

- ○ American Indian
- ○ Asian or Pacific Islander
- ○ Black, African American
- ○ Hispanic, Latino
- ○ White
- ○ Other: What?

COLLEGE ACTIVITIES

DIRECTIONS: In your experience at this college during the current school year, about how often have you done each of the following? Indicate your response by filling in one of the spaces to the left of each statement.

Very often	Often	Occasionally	Never	Library Experiences
○	○	○	○	Used the library as a quiet place to read or study materials you brought with you.
○	○	○	○	Used the card catalogue or computer to find what materials there were on some topic.
○	○	○	○	Asked the librarian for help in finding material on some topic.
○	○	○	○	Read something in the reserve book room or reference section.
○	○	○	○	Used indexes (such as the Reader's Guide to Periodical Literature) to journal articles.
○	○	○	○	Developed a bibliography or set of references for use in a term paper or other report.
○	○	○	○	Found some interesting material to read just by browsing in the stacks.
○	○	○	○	Ran down leads, looked for further references that were cited in things you read.
○	○	○	○	Gone back to read a basic reference or document that other authors had often referred to.
○	○	○	○	Checked out books to read (not textbooks).

Very often	Often	Occasionally	Never	Experiences with Faculty
○	○	○	○	Talked with a faculty member.
○	○	○	○	Asked your instructor for information related to a course you were taking (grades, make-up work, assignments, etc.).
○	○	○	○	Visited informally and briefly with an instructor after class.
○	○	○	○	Made an appointment to meet with a faculty member in his/her office.
○	○	○	○	Discussed ideas for a term paper or other class project with a faculty member.
○	○	○	○	Discussed your career plans and ambitions with a faculty member.
○	○	○	○	Asked your instructor for comments and criticisms about your work.
○	○	○	○	Had coffee, cokes, or snacks with a faculty member.
○	○	○	○	Worked with a faculty member on a research project.
○	○	○	○	Discussed personal problems or concerns with a faculty member.

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DIRECTIONS: In your experience at this college during the current school year, about how often have you done each of the following? Indicate your response by filling in one of the spaces to the left of each statement.

Course Learning

Very often | Often | Occasionally | Never

- ○○○○ Took detailed notes in class.
- ○○○○ Participated in class discussions.
- ○○○○ Underlined major points in the readings.
- ○○○○ Tried to see how different facts and ideas fit together.
- ○○○○ Thought about practical applications of the material.
- ○○○○ Worked on a paper or project where you had to integrate ideas from various sources.
- ○○○○ Summarized major points and information in your readings or notes.
- ○○○○ Tried to explain the material to another student or friend.
- ○○○○ Made outlines from class notes or readings.
- ○○○○ Did additional readings on topics that were introduced and discussed in class.

Art, Music, Theater

Very often | Often | Occasionally | Never

- ○○○○ Talked about art (painting, sculpture, architecture, artists, etc.) with other students at the college.
- ○○○○ Gone to an art gallery or art exhibit on the campus.
- ○○○○ Read or discussed the opinions of art critics.
- ○○○○ Participated in some art activity (painting, pottery, weaving, drawing, etc.).
- ○○○○ Talked about music (classical, popular, musicians, etc.) with other students at the college.
- ○○○○ Attended a concert or other music event at the college.
- ○○○○ Read or discussed the opinions of music critics.
- ○○○○ Participated in some music activity (orchestra, chorus, etc.).
- ○○○○ Talked about the theater (plays, musicals, dance, etc.) with other students at the college.
- ○○○○ Seen a play, ballet, or other theater performance at the college.
- ○○○○ Read or discussed the opinions of drama critics.
- ○○○○ Participated in or worked on some theatrical production (acted, danced, worked on scenery, etc.).

Student Union

Very often | Often | Occasionally | Never

- ○○○○ Had meals, snacks, etc. at the student union or student center.
- ○○○○ Looked at the bulletin board for notices about campus events.
- ○○○○ Met your friends at the student union or student center.
- ○○○○ Sat around in the union or center talking with other students about your classes and other college activities.
- ○○○○ Used the lounge(s) to relax or study by yourself.
- ○○○○ Seen a film or other event at the student union or center.
- ○○○○ Attended a social event in the student union or center.
- ○○○○ Heard a speaker at the student union or center.
- ○○○○ Played games that were available in the student union or center (ping-pong, cards, pool, pinball, etc.).
- ○○○○ Used the lounge(s) or meeting rooms to meet with a group of students for a discussion.

Athletic and Recreation Facilities

Very often | Often | Occasionally | Never

- ○○○○ Set goals for your performance in some skill.
- ○○○○ Followed a regular schedule of exercise, or practice in some sport, on campus.
- ○○○○ Used outdoor recreational spaces for casual and informal individual athletic activities.
- ○○○○ Used outdoor recreational spaces for casual and informal group sports.
- ○○○○ Used facilities in the gym for individual activities (exercise, swimming, etc.).
- ○○○○ Used facilities in the gym for playing sports that require more than one person.
- ○○○○ Sought instruction to improve your performance in some athletic activity.
- ○○○○ Played on an intramural team.
- ○○○○ Kept a chart or record of your progress in some skill or athletic activity.
- ○○○○ Was a spectator at college athletic events.

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DIRECTIONS: In your experience at this college during the current school year, about how often have you done each of the following? Indicate your response to the left of each statement.

Very often / Often / Occasionally / Never

Clubs and Organizations

- ○○○○ Looked in the student newspaper for notices about campus events and student organizations.
- ○○○○ Attended a program or event put on by a student group.
- ○○○○ Read or asked about a club, organization, or student government activity.
- ○○○○ Attended a meeting of a club, organization, or student government group.
- ○○○○ Voted in a student election.
- ○○○○ Discussed policies and issues related to campus activities and student government.
- ○○○○ Worked in some student organization or special project (publications, student government, social event, etc.).
- ○○○○ Discussed reasons for the success or lack of success of student club meetings, activities, or events.
- ○○○○ Worked on a committee.
- ○○○○ Met with a faculty adviser or administrator to discuss the activities of a student organization.

Very often / Often / Occasionally / Never

Experience in Writing

- ○○○○ Used a dictionary or thesaurus to look up the proper meaning of words.
- ○○○○ Consciously and systematically thought about grammar, sentence structure, paragraphs, word choice, and sequence of ideas or points as you were writing.
- ○○○○ Wrote a rough draft of a paper or essay and then revised it yourself before handing it in.
- ○○○○ Spent at least five hours or more writing a paper (not counting time spent in reading or at the library).
- ○○○○ Asked other people to read something you wrote to see if it was clear to them.
- ○○○○ Referred to a book or manual about style of writing, grammar, etc.
- ○○○○ Revised a paper or composition two or more times before you were satisfied with it.
- ○○○○ Asked an instructor for advice and help to improve your writing.
- ○○○○ Made an appointment to talk with an instructor who had criticized a paper you had written.
- ○○○○ Submitted for publication an article, story, or other composition you had written.

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Very often / Often / Occasionally / Never

Personal Experiences

- ○○○○ Told a friend why you reacted to another person the way you did.
- ○○○○ Discussed with other students why some groups get along smoothly, and other groups don't.
- ○○○○ Sought out a friend to help you with a personal problem.
- ○○○○ Elected a course that dealt with understanding personal and social behavior.
- ○○○○ Identified with a character in a book or movie and wondered what you might have done under similar circumstances.
- ○○○○ Read articles or books about personal adjustment and personality development.
- ○○○○ Taken a test to measure your abilities, interests, or attitudes.
- ○○○○ Asked a friend to tell you what he/she really thought about you.
- ○○○○ Been in a group where each person, including yourself, talked about his/her personal problems.
- ○○○○ Talked with a counselor or other specialist about problems of a personal nature.

Very often / Often / Occasionally / Never

Student Acquaintances

- ○○○○ Made friends with students whose academic major field was very different from yours.
- ○○○○ Made friends with students whose interests were very different from yours.
- ○○○○ Made friends with students whose family background (economic and social) was very different from yours.
- ○○○○ Made friends with students whose age was very different from yours.
- ○○○○ Made friends with students whose race was different from yours.
- ○○○○ Made friends with students from another country.
- ○○○○ Had serious discussions with students whose philosophy of life or personal values were very different from yours.
- ○○○○ Had serious discussions with students whose religious beliefs were very different from yours.
- ○○○○ Had serious discussions with students whose political opinions were very different from yours.
- ○○○○ Had serious discussions with students from a country different from yours.

DIRECTIONS: In your experience at this college during the current school year, about how often have you done each of the following?

Very often	Often	Occasionally	Never	Science
○	○	○	○	Memorized formulas, definitions, technical terms.
○	○	○	○	Tried to express a set of relationships in mathematical terms.
○	○	○	○	Tested your understanding of some scientific principle by seeing if you could explain it to another student.
○	○	○	○	Read articles (not assigned) about scientific theories or concepts.
○	○	○	○	Practiced to improve your skill in using some laboratory equipment.
○	○	○	○	Showed a classmate how to use a piece of scientific equipment.
○	○	○	○	Attempted to explain an experimental procedure to a classmate.
○	○	○	○	Went to an exhibit or demonstration of some new scientific device.
○	○	○	○	Completed an experiment or project using scientific methods.
○	○	○	○	Tried to explain to another person the scientific basis for concerns about pollution, recycling, alternative sources of energy, acid rain, or similar aspects of the world around you.

DIRECTIONS: If you are now living in a dormitory or fraternity/sorority, about how often have you done each of the following in that residence unit during the current school year? Indicate your response by filling in one of the spaces to the left of each statement. If you do not live in a campus residence, omit these items.

Very often	Often	Occasionally	Never	Campus Residence
○	○	○	○	Had lively conversations about various topics during dinner in the dining room or cafeteria.
○	○	○	○	Gone out with other students for late night snacks.
○	○	○	○	Offered to help another student (with course work, errands, favors, advice, etc.) who needed some assistance.
○	○	○	○	Participated in discussions that lasted late into the night.
○	○	○	○	Asked others for assistance in something you were doing.
○	○	○	○	Borrowed things (clothes, records, posters, books, etc.) from others in the residence unit.
○	○	○	○	Attended social events put on by the residence unit.
○	○	○	○	Studied with other students in the residence unit.
○	○	○	○	Helped plan or organize an event in the residence unit.
○	○	○	○	Worked on some community service or fund raising project with other students in the residence unit.

CONVERSATIONS

DIRECTIONS: In conversations with other students at this college during the current school year, about how often have you talked about each of the following?

Very often	Often	Occasionally	Never	Topics of Conversation
○	○	○	○	Current events in the news.
○	○	○	○	Major social problems such as peace, human rights, equality, justice.
○	○	○	○	Different life styles and customs.
○	○	○	○	The ideas and views of other people such as writers, philosophers, historians.
○	○	○	○	The arts – painting, theatrical productions, ballet, symphony, movies, etc.
○	○	○	○	Science – theories, experiments, methods.
○	○	○	○	Computers and other technologies.
○	○	○	○	Social and ethical issues related to science and technology such as energy, pollution, chemicals, genetics, military use.
○	○	○	○	The economy – employment, wealth, poverty, debt, trade, etc.
○	○	○	○	International relations.

In these conversations with other students, about how often have you done each of the following?

Very often	Often	Occasionally	Never	Information in Conversations
○	○	○	○	Referred to knowledge you had acquired in your reading.
○	○	○	○	Explored different ways of thinking about the topic.
○	○	○	○	Referred to something a professor said about the topic.
○	○	○	○	Subsequently read something that was related to the topic.
○	○	○	○	Changed your opinion as a result of the knowledge or arguments presented by others.
○	○	○	○	Persuaded others to change their minds as a result of the knowledge or arguments you cited.

READING/WRITING

During the current school year, about how many books have you read? Fill in one space in each column.

Textbooks or assigned books | **Non-assigned books**

- ○○ none
- ○○ fewer than 5
- ○○ between 5 and 10
- ○○ between 10 and 20
- ○○ more than 20

During the current school year, about how many written reports have you made? Fill in one space in each column.

Essay exams in your courses | **Term papers or other written reports**

- ○○ none
- ○○ fewer than 5
- ○○ between 5 and 10
- ○○ between 10 and 20
- ○○ more than 20

OPINIONS ABOUT COLLEGE

How well do you like college?

- ○ I am enthusiastic about it.
- ○ I like it.
- ○ I am more or less neutral about it.
- ○ I don't like it.

If you could start over again, would you go to the same college you are now attending?

- ○ Yes, definitely
- ○ Probably yes
- ○ Probably no
- ○ No, definitely

THE COLLEGE ENVIRONMENT

Colleges differ from one another in the extent to which they emphasize or stress various aspects of students' development. Thinking of your own experience at this college, to what extent do you feel that each of the following is emphasized? The responses are numbered from 7 to 1, with the highest and lowest points described. Fill in the space of whichever number best indicates your impression on this seven-point rating scale.

Emphasis on the development of academic, scholarly, and intellectual qualities

Strong emphasis ⑦ ⑥ ⑤ ④ ③ ② ① **Weak emphasis**

Emphasis on the development of esthetic, expressive, and creative qualities

Strong emphasis ⑦ ⑥ ⑤ ④ ③ ② ① **Weak emphasis**

Emphasis on being critical, evaluative, and analytical

Strong emphasis ⑦ ⑥ ⑤ ④ ③ ② ① **Weak emphasis**

Emphasis on the development of vocational and occupational competence

Strong emphasis ⑦ ⑥ ⑤ ④ ③ ② ① **Weak emphasis**

Emphasis on the personal relevance and practical values of your courses

Strong emphasis ⑦ ⑥ ⑤ ④ ③ ② ① **Weak emphasis**

The next three ratings refer to relationships among people at the college. Again, thinking of your own experience, how, would you rate these relationships on the seven-point scales?

Relationship with other students, student groups, and activities

Friendly, Supportive, Sense of belonging	⑦	⑥	⑤	④	③	②	①	**Competitive, Uninvolved, Sense of alienation**

Relationships with faculty members

Approachable, Helpful, Understanding, Encouraging	⑦	⑥	⑤	④	③	②	①	**Remote, Discouraging, Unsympathetic**

Relationships with administrative personnel and offices

Helpful, Considerate, Flexible	⑦	⑥	⑤	④	③	②	①	**Rigid, Impersonal, Bound by regulations**

ESTIMATE OF GAINS

DIRECTIONS: In thinking over your experiences in college up to now, to what extent do you feel you have gained or made progress in each of the following respects? Indicate your response by filling in one of the spaces to the left of each statement.

Very much	Quite a bit	Some	Very little	
○	○	○	○	Vocational training – acquiring knowledge and skills applicable to a specific job or type of work.
○	○	○	○	Acquiring background and specialization for further education in some professional, scientific, or scholarly field.
○	○	○	○	Gaining a broad general education about different fields of knowledge.
○	○	○	○	Gaining a range of information that may be relevant to a career.
○	○	○	○	Developing an understanding and enjoyment of art, music, and drama.
○	○	○	○	Broadening your acquaintance and enjoyment of literature.
○	○	○	○	Writing clearly and effectively.
○	○	○	○	Acquiring familiarity with the use of computers.
○	○	○	○	Becoming aware of different philosophies, cultures, and ways of life.
○	○	○	○	Developing your own values and ethical standards.
○	○	○	○	Understanding yourself – your abilities, interests, and personality.

Very much	Quite a bit	Some	Very little	
○	○	○	○	Understanding other people and the ability to get along with different kinds of people.
○	○	○	○	Ability to function as a team member.
○	○	○	○	Developing good health habits and physical fitness.
○	○	○	○	Understanding the nature of science and experimentation.
○	○	○	○	Understanding new scientific and technical developments.
○	○	○	○	Becoming aware of the consequences (benefits/hazards/dangers/values) of new applications in science and technology.
○	○	○	○	Ability to think analytically and logically.
○	○	○	○	Quantitative thinking – understanding probabilities, proportions, etc.
○	○	○	○	Ability to put ideas together, to see relationships, similarities, and differences between ideas.
○	○	○	○	Ability to learn on your own, pursue ideas, and find information you need.
○	○	○	○	Seeing the importance of history for understanding the present as well as the past.
○	○	○	○	Gaining knowledge about other parts of the world and other people–Asia, Africa, South America, etc.

ADDITIONAL QUESTIONS

1.	Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	6.	Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
2.	Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	7.	Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
3.	Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	8.	Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
4.	Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	9.	Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
5.	Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	10.	Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

THANK YOU FOR YOUR PARTICIPATION

OTHER ID#, if requested

393677

DO NOT MARK IN THIS SHADED AREA

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